Mountaintop Mining/Valley Fill
Environmental Impact Statement (EIS)
Programmatic Review

Ideas for Government Action

December 1999

Introduction

This document presents -- for public review and discussion -- a number of ideas for potential government action to address the environmental impacts of mountaintop mining and valley fills in the Appalachian coalfields. The ideas include potential actions at both the Federal and State levels. They represent different ways to address what the agencies preparing the EIS believe are the major issues. There are far more ideas for government action presented here than can be analyzed in depth in the EIS. Some ideas are alternatives to others. Public comments will assist the agencies to select the most valuable ideas for further analysis and to judge whether the most significant issues within the purpose of the EIS have been identified.

During their program review, the agencies came to some preliminary conclusions about which issues should receive priority attention in the EIS, and grouped the ideas for government action according to these issues. Public input is invited on the selection of priority issues, as well as on the potential actions.

Background. The U.S. Environmental Protection Agency, U.S. Office of Surface Mining, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and West Virginia Division of Environmental Protection are cooperating in the preparation of an EIS on mountaintop mining and valley fill operations in the Appalachian coalfields. The Commonwealths of Kentucky and Virginia are participating in the EIS process, providing available data regarding operations within their jurisdictions.

The purpose of the EIS is *"to consider developing agency policies, guidance, and coordinated agency decision-making processes to minimize, to the maximum extent practicable, the adverse environmental effects to waters of the United States and to fish and wildlife resources from mountaintop mining operations, and to environmental resources that could be affected by the size and location of fill material in valley fill sites."* The draft EIS is on schedule to be released for public comment during the summer of 2000, and the final EIS is slated for completion by January 2001.

To conform with the National Environmental Policy Act, an EIS must evaluate different alternatives and recommend the preferred alternative. For this EIS, the alternatives will be made up of various combinations of possible program changes, such as new or revised regulations, policies, guidance, permitting processes and inter-agency coordination; recommendations for

further research and other means to improve information for making decisions; and even changes to the laws that govern surface coal mining operations. To analyze the relative merit of the alternatives, potential actions will be categorized according to the significant issues which they would address.

How the ideas were developed. The ideas for potential government action reflect the agencies' review of public comments solicited during the initial phase of the EIS scoping process. Ideas also came from the agencies' review of reports of earlier efforts, such as the West Virginia Governor's Task Force Report issued last December. Some ideas reflect program improvements already being developed. Finally, as described in EIS Bulletin 3 (November 1999), ideas were developed during a series of interagency meetings held this summer to review current programs and policies ("program review process").

Instructions. The ideas for government action are presented in a table format so that reviewers who wish to comment can rank each idea. If you wish to indicate your views about the priority of any idea, please do so by writing a number in the right hand column (1-high; 2-medium; 3-low priority). There are also blank rows where you can add new ideas (prioritize **them** too, please) or reword, edit, or clarify an existing idea. If you would like to download the form and type in your comments and edits, you may retrieve an Adobe Acrobat version from the EPA Region III web site at http://www.epa.gov/region3/mtntop.

Please return your completed table as soon as possible, and no later than January 3, 2000, to:

William Hoffman
3ES30
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

You may contact Mr. Hoffman by telephone at (215) 814-2995, and send comments by fax to (215) 814-2783. You may also e-mail a file with your mark-ups to: "hoffman.william@epa.gov".

To emphasize, the purpose of this public review and comment opportunity is to assist the agencies in selecting potential government actions to be analyzed in the EIS. You do not have to comment on every idea. If you are only interested in certain issues and would like to prioritize and/or comment only on a portion of the document, we would welcome a partial review as well. We appreciate your attention and response.

Priority Issues

The ideas for government action are presented in three categories, according to whether they should be given priority attention for both Federal and State actions, appear to be most amenable to State action, or are issues which will be addressed in the EIS, but for which no new government actions are presented. The preliminary conclusions about which issues fit into each category are:

1. **Category I -** Priority attention for new Federal and State actions should be given to addressing the issues associated with **protecting aquatic resources**. The ideas for government action address four aquatic resource protection issues:

Issue 1 - Impacts on Aquatic Resources

A. Preventing stream loss and adverse surface- and groundwater impacts from valley fills and other mountaintop mining operations;
B. Ability of mined area reclamation practices to restore stream habitat and aquatic functions impacted by mining;
C. Effectiveness of compensatory mitigation projects to make up for the loss of stream habitat and aquatic functions;
D. Protecting watersheds from cumulative effects of mountaintop mining/valley fill activities and other land disturbances.

2. **Category II** - New actions should be considered particularly at the State level to address the issues associated with **impacts on communities**. The report of the West Virginia Governor's Task Force has already spurred action in West Virginia on concerns in this area. **Protection of terrestrial habitats** is the second issue area. The agencies concluded from the program review that current Federal statutes and regulations generally provide an appropriate and adequate framework, although this conclusion needs to be confirmed by further study in some cases. The ideas for government action in this category address the following:

Issue 2 - Impacts on Communities

A. Effects of blasting and other mining activities on homes, water wells and quality of life;
B. Effects of fugitive dust–both as a nuisance and a health risk;
C. Effects from mountaintop mining on flooding of downstream communities;
D. Valley fill stability;
E. Ability for reclaimed mined land to provide an economic and/or social benefit to coal field communities;
F. Effects of mining on scenery and culturally significant landscapes.

Issue 3 - Terrestrial Impacts

A. Effects of mountaintop mining on plants and wildlife, including unique/endangered species;
B. Effects of deforestation and reduction/fragmentation of forested areas by mountaintop mining;
C. Cumulative effects on the environment from mining and other land disturbance;
D. Effects of mountaintop mining on biodiversity and sustainability;
E. Concerns that current mountaintop mining reclamation practices introduce and increase exotic and invasive plant species.

3. **Category III** - **Socio-economic issues** were expressed strongly in the EIS scoping meetings. Many speakers were concerned about the effects of further restrictions of mountaintop mining which might be recommended in the EIS on such economic areas as employment, community businesses whose customers are dependent upon mining employment, equipment suppliers and other businesses whose clients are mining companies, and State-county tax revenues. Speakers also requested that the EIS address the effect of further restrictions on mountaintop mining on energy resources and electricity rates. Some people commented on the future of Appalachia "after mining" and the need to look for other kinds of economic development.

The socio-economic issues which might be posed by restrictions on mountaintop mining will be addressed in the EIS. They will assessed as an integral part of the economic analysis of the alternatives for government action rather than as a list of possible actions. Development of economic development actions is beyond the scope of the EIS, and beyond the authorities of the agencies participating in the EIS. However, the agencies hope that the information developed during the EIS process will be of value for those with economic development responsibilities.

The EIS will address the relationship of mountaintop coal mining to global climate change and strategies for prevention and/or mitigation.

On to the list of actions.....

MOUNTAINTOP MINING EIS PROGRAMMATIC REVIEW

Version - December 7, 1999

CATEGORY I - PRIORITY ATTENTION ISSUES

Issue 1 - Impacts on Aquatic Resources

Subissue A	Preventing stream loss and adverse surface- and groundwater impacts from valley fills and other mountaintop mining operations.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Improve permit decision making by adopting a less-subjective procedure for evaluating whether excess spoil disposal in valley fills has been minimized relative to the total volume of overburden removed.	
Idea	2. Clarify requirements for obtaining a Surface Mining Control and Reclamation Act (SMCRA) variance from "approximate original contour" for commercial forestry in a way that minimizes excess spoil disposal for this post-mining land use.	
Idea	3. Develop improved water and biological monitoring plans for permit applicants which improve the scientific basis for both SMCRA and Clean Water Act (CWA) permit decisions as part of the West Virginia (WV) interim permitting process. Especially improve evaluation of watershed impacts. Evaluate and finalize these plans based on EIS findings.	
Idea	4. The EIS "Stream" and "Fisheries" technical studies will help the agencies establish the value of headwater streams and assist in setting thresholds for “more than minimal impact” as well as a baseline for mitigation requirements. If the results are inconclusive, additional Federal-State biological studies could be carried out in cooperation with mining companies and advised by academic researchers.	
Idea	5. Inventories of valley fills, assessments of future mining potential, and data on past mining locations are being developed in geographic information system (GIS) format as part of the EIS and other state agency efforts. Progress could be stepped up through public-private cooperation and/or additional funding.	
Idea	6. As part of interim WV permitting activities, the Federal agencies have joined in pre-application meetings with mining companies to: 1) clarify all information-gathering requirements necessary for SMCRA, CWA and threatened/endangered species decisions; 2) improve environmental assessment and protection; and, 3) integrate procedures for making SMCRA and CWA permit decisions so that all impacts and requirements are considered at the same time early in the process. Formalize this process.	
Idea	7. WV interim permitting activities also include encouraging cooperative information-gathering and assessment among companies with present and proposed mines in the same watershed. Formalize this approach to assist in cumulative impact assessments.	

Idea	8. The WV interim permitting approach uses a more-detailed SMCRA analysis of "cumulative hydrologic impact assessment" (CHIA) by combining surface-water CHIA assessment with CWA-type water quality and aquatic biology reviews. Adopt this process to improve impact assessment.	
Idea	9. WVDEP has begun to perform 404(b)(1) Guideline environmental reviews for small valley fills which do not require individual Corps of Engineers (COE) permits. Adopt this process formally.	
Idea	10. EPA and the COE are training State personnel who will carry out CWA 404 review functions. Periodic training could occur following the EIS.	
Idea	11. To minimize stream area affected by mining, formalize the requirement to place sediment ponds as close as possible to the toe of valley fills.	
Idea	12. Stream buffer zone changes	
Option	(a) To minimize stream loss, interpret the SMCRA stream buffer zone regulations to restrict fills to ephemeral (wet weather flow only) portions of headwater streams.	
Option	(b) Revise the SMCRA buffer zone rules to meet SMCRA 515(c)(4)(d) mandate ("no damage...to natural water courses") and to clarify the relationship with Clean Water Act requirements (e.g., rely on CWA criteria (such as 404(b)(1) Guidelines) to determine placement and size of fills).	
Option	(c) Implement an MOU clarifying compliance with SMCRA buffer zone and CWA requirements related to valley fills. For example, the MOU could explain how to address key criteria such as "material damage" (SMCRA); "significant degradation" to aquatic values and "no practicable alternatives to fill" (CWA).	
Option	(d) In revising the SMCRA buffer zone rule, develop restrictions to control cumulative impact of present and future mining operations in a watershed, e.g.: (1) prohibit filling more than a percentage of stream valley in a watershed; (2) encourage placement of fill in existing impaired areas; and, (3) control timing of new mining to promote recovery in already-disturbed watersheds.	
Idea	13. Use state water quality standards to limit/prohibit valley fills in specific areas containing special attributes or resources (e.g., current standards specify brown trout habitat as specially-protected species). The antidegradation policy or implementation procedures could be used.	
Idea	14. To reconcile differing COE and EPA definitions of “fill material” discharged into U.S. waters, amend current regulations and clarify CWA applicability to valley fills and other discharges from mining operations.	

Idea	15. Reissue COE Nationwide 21 permit, which regulates discharges of fill material from surface mining authorized under SMCRA, to incorporate geographic or other numerical limits on fills which can be authorized by general permit.	
Idea	16. Environmental decisions for SMCRA and CWA permit evaluations could be improved if methods for identifying functions and evaluating the functions of headwater stream reaches (such as biological indices) are established. Recommend evaluation of possible tools for quick delineation of ephemeral, intermittent, and perennial stream characteristics (e.g., NRCS base flow estimation method, USGS method establishing groundwater table, COE high-water mark, Charles Norris 5% slope method).	
Idea	17. Establish scientific criteria: 1) for designating specially-protected areas (such as impact on threatened/endangered species; stream reaches naturally supporting diverse fish and invertebrate species); 2) on indicators of ecological function, aquatic diversity, productivity and stability; and, 3) on acceptable levels of loss based on functional value. These criteria could increase quality of information in permit applications, facilitate permit decisions to protect sensitive aquatic areas, and assist mining companies in planning.	
Idea	18. Improve interpretation of environmental information and data by state agencies and mining companies through in-depth watershed-based analysis of permit applications and cumulative effects using the latest scientific tools, like biological indices for measuring stream impacts and improvements and enhanced GIS capabilities, and overlay maps of special aquatic protection areas.	
Idea	19. More thoroughly identify and assess existing aquatic resources to assist in minimizing impacts of mining and valley fills through agency/mining company cooperative efforts. The assessment could be institutionalized in State water quality and fish and wildlife inventories and ongoing monitoring programs. A list of types of watershed attributes where valley fills would be prohibited could be developed. Also, include an inventory of areas already degraded by mining; characterize likelihood of recovery and value of resource after recovery.	
Idea	20. Use mapping and inventories to increase availability of information for improved public participation in permit decision-making, especially related to cumulative impacts of other mining and fills in watersheds.	
Idea	21. Conservation agreements, similar to the agreements for the Copper-Bellied Water Snake in western Kentucky and southern Indiana/Illinois), could be established to enhance the permit process ability to avoid adverse impacts to threatened, endangered, or candidate species.	
New Idea		

New Idea		
New Idea		
Subissue B	Ability of mined area reclamation practices to restore stream habitat and aquatic functions impacted by mining.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Improve controls governing AOC variances for commercial forestry post-mining land use, such as those under development by OSM and WVDEP.	
Idea	2. Improve controls governing riparian zone restoration requirements to aid stream restoration similar to those under development in the WV interim permitting process.	
Idea	3. Continue the ongoing technical assessment of aquatic ecosystem restoration methods suited for mined land reclamations at demonstration sites and maintain a continuous link with professionals engaged in aquatic restoration nationwide.	
Idea	4. The WV interim permitting effort includes earlier involvement of Federal and state fish & wildlife experts in review of SMCRA permit applications to identify the best opportunities for restoration of aquatic values in watersheds impacted by mining. Formalize this process.	
Idea	5. Requirements for bond releases that eliminate wildlife-sensitive areas such as wetlands and small open water areas could be altered to encourage protection of wildlife and habitat.	
Idea	6. Reclamation regulations for fills could be changed to allow for more storage and/or allow different configuration to aid in minimizing the impacts associated with fills.	
Idea	7. Performance standards could be developed to promote the creation of aquatic habitat as part of reclamation, so as to promote restoration of degraded and lost aquatic habitat.	
Idea	8. A biological component could be added to hydrologic reclamation plan provisions.	
Idea	9. OSM is evaluating contemporaneous reclamation requirements. The evaluation could include judging the effectiveness of contemporaneous standards in mitigating aquatic habitat loss. Improved policies could be developed, if necessary.	
Idea	10. Use a watershed approach to achieve habitat reclamation by involving all companies mining in a watershed and watershed landowners in assessment of opportunities to restore lost aquatic values habitat.	

Idea	11. SMCRA/CWA permit application requirements could include assessment of opportunities to replace any lost aquatic habitat values due to previous mining and valley filling within the mined watershed.	
Idea	12. Permit monitoring requirements could be established to evaluate the success of aquatic restoration initiatives as part of reclamation. This approach could be institutionalized by requiring CHIA/CWA reviews and reclamation and restoration controls on a watershed basis.	
New Idea		
New Idea		
New Idea		
Subissue C	Effectiveness of compensatory mitigation projects to make up for the loss of stream habitat and aquatic functions.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. The interim permitting process in WV includes an effort to augment WVDEP mitigation requirements with Federal authority under CWA 404. The intent is to require compensatory mitigation for aquatic values because of valley fills or other mining processes. Formalize this approach.	
Idea	2. The interim permitting process in WV is developing a State-Federal mitigation agreement that will result in better identification of stream restoration/compensation requirements during permit application processes. These requirements will be enforceable through permitting conditions. Institutionalize this approach	
Idea	3. To respond to potential cumulative effects of multiple small fills, clarify that compensatory mitigation is appropriate for valley fills affecting smaller than 250 acre watersheds.	
Idea	4. The interim permitting activities in WV include evaluation of State mitigation fund activities and development of a Federal-State cooperative program to identify the best aquatic restoration opportunities which could be implemented as part of compensatory mitigation for unavoidable mining impacts on watersheds (in connection with the State fish and wildlife strategy). This activity could be formalized in a state-wide inventory of stream restoration projects in need of financing.	
Idea	5. Evaluate the adequacy of compensatory mitigation measures to minimize unavoidable mining impacts and impose stricter requirements to assure “no net loss” of aquatic functions from mining operations and valley fills.	

Idea	6. Where State mitigation funds apply, a "sliding scale" of compensation could be developed so that costs of mitigation would be commensurate with the levels of impacts--rather than compensation based on set "values per stream unit affected."	
Idea	7. Federal oversight of mitigation could be increased, for instance, by a Memorandum of Understanding among the COE, EPA, FWS and OSM based on the principles in the Federal National Environmental Policy Act (NEPA) regulations.	
Idea	8. SMCRA and CWA requirements could be merged to establish financial liability (e.g., bonding or insurance) to assure mitigation projects are completed successfully.	
Idea	9. Incentives and credits could be developed to minimize mining and valley fill impacts. State and Federal interagency teams could be established to explore and develop incentives (credits) used to improve aquatic areas in watersheds degraded by previous mining activities. Prioritizing streams in need of restoration (as part of the inventory in Idea 4. above) will help identify good sites for credits.	
Idea	10. Mitigation credits could be issued only for the enhancement, restoration, or creation of aquatic resources and discouraged for out-of-kind mitigation, as in the current COE-EPA agreement on mitigation under CWA 404.	
Idea	11. Additional mitigation credits could be given to operations that: (a) restore an AML-impaired stream; (b) eliminate acid mine drainage; (c) dispose of excess spoil on pre-existing benches (from previous mining) in lieu of valley fill; or (d) create threatened and endangered species protection where none existed before, e.g. a mussel preserve. Credits might be given for ISO 14000-certified companies on the basis of using a wide range of best management practices.	
Idea	12. Develop innovative mitigation in partnership with other organizations, such as a fish and wildlife foundation, that shares resources and technical knowledge of federal, state and private entities.	
Idea	13. An interagency award for excellence could be established for mine operators who create a net gain of high-quality aquatic habitat.	
Idea	14. Federal-State interagency teams could be established to evaluate, modify, or develop 'best practices." A specific example would be to develop land forms that incorporate or create aquatic resources (e.g. lakes or ponds) on mined areas available for wildlife habitat and forest production.	
Idea	15. An inventory of AML restoration projects and other stream restoration projects that demonstrate successful aquatic habitat creation, restoration, or enhancement could be compiled and distributed to assist in designing successful restoration projects. Periodic technical conferences could be held to review and update this information.	

Idea	16. Additional research could be supported by government agencies to document values of headwater streams and options for restoration/replacement of values.	
Idea	17. Working in public-private partnerships for mitigation projects which are testing new technology and methods (with evaluation of results over time) could improve mitigation.	
Idea	18. The U.S. FWS could train permit holders, federal and state agency staff, and applicants on state-of-the-art techniques to protect fish and wildlife resources.	
Idea	19. Guidance could be developed to assist industry and government representatives to implement protective measures, such as: (a) updated advice for SMCRA permit applicants on how to develop and implement better methods to protect fish, wildlife biota and habitat; (b) a federal manual for stream delineation similar to the wetland delineation manual; and, (c) guidance for best management practices to protect ecological resources.	
Idea	20. A detailed technical "how-to" manual could be developed on stream mitigation, replacement of functions (in-kind), and stream restoration.	
Idea	21. A mitigation project monitoring plan could be incorporated into permit inspection schedules.	
New Idea		
New Idea		
New Idea		
Subissue D	Protecting watersheds from cumulative effects of mountaintop mining/valley fill activities and other land disturbances.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Augmenting CHIA analyses of surface mining permits to include CWA water quality and aquatic biology reviews (Idea I.A.8.) increases the state's capacity to assess cumulative watershed impacts, including consideration of non-mining impacts affecting the same watersheds. Formalize this approach.	
Idea	2. Form watershed planning groups to advise agencies on abandoned mine land reclamation, mining concerns, land use aspirations, etc.	

Idea	3. The EIS Landscape Ecology study for assessing cumulative impacts, and associated GIS presentations, could provide a valuable long-term tool for assessing impacts of all activities to watersheds, assisting area land use analysis and planning, as well as improving public information.	
Idea	4. As part of the interim permitting activities in WV, important scientific questions about methodologies to assess compliance with water quality standards are being clarified (e.g. using dissolved metals instead of total metals for baseline and compliance monitoring; changing total recoverable to dissolved metals; and the use of "clean sampling and analysis techniques"). Adopt these techniques and standards.	
Idea	5. NEPA environmental assessment is being applied to 404 permit applications for large valley fills during the interim permit processing in WV. Such assessments include information about mining and other land-disturbing activities affecting the same watersheds. A NEPA compliance guidance document is being produced by the Corps of Engineers, with assistance from the other agencies, and guidance will be given to applicants at the earliest possible time (pre-SMCRA permit application) to facilitate coordinated permit reviews for SMCRA, CWA, Fish and Wildlife Coordination Act, and the Endangered Species Act. Based on the EIS findings, the guidance document could be updated and/or expanded	
Idea	6. Liaisons have been established from each agency to serve as an "interagency clearinghouse" on permitting decisions. This type of coordination could be formalized.	
Idea	7. An interagency team could be established to review and coordinate statutory and regulatory requirements under SMCRA and CWA to increase efficiency and environmental effectiveness of state programs to protect water resources.	
Idea	8. State water quality standards could be enhanced by development and adoption of biological criteria.	
Idea	9. CWA Section 402 permit requirements and monitoring could be revised to incorporate biological criteria and promote vegetative cover to reduce erosion and sedimentation.	
Idea	10. Establish a universal stream classification/definition for consistent application by agencies, industry, and the public. Any definition of perennial stream should take into account effects of drought conditions on year-round flow.	
Idea	11. The use of biological indices could be considered for measuring stream impacts and improvements over time where streams are affected by fills; such indices could be included in "probable hydrologic consequence (PHC) and CHIA analyses. Reference areas of undisturbed aquatic habitat could be used as a baseline to compare with mined areas to determine the magnitude of impacts and set mitigation requirements.	
Idea	12. Conduct research to evaluate the control of sediment discharges from mining activities as they combine with the sediment from activities such as timber harvesting and road building/use.	

Idea	13. Develop government-sponsored training for industry on environmental impact assessment, monitoring, remediation, mitigation, impact avoidance methods, etc.	
Idea	14. Academic programs sponsored by universities in Appalachia could offer training on headwater stream values and other aquatic resources. Public-private assistance could be provided to establish regional centers of excellence on improved watershed assessment tools and indices of aquatic resource health, and on aquatic area enhancement techniques.	
Idea	15. State GIS capabilities could be enhanced to allow for in-depth watershed-based analysis of permits, environmental consequences, alternatives, and mitigation scenarios that could then be accessed by all State and Federal agencies, as well as other stakeholders.	
Idea	16. Support increased capabilities of State environmental agencies to interpret and analyze information and data, and increase coordination between State environmental and fish and wildlife agencies.	
Idea	17. A regional hydrologic database/GIS could be developed to include all baseline hydrologic (chemical, biological, physical) monitoring data for use in PHC and CHIA or landscape ecology.	
Idea	18. Building on the Clean Water Action Plan initiatives, an “Appalachian Highlands” stream monitoring/Watershed Assessment network could be established to integrate Federal, State, applicant, and citizen monitoring in the watersheds affected by mountaintop mining and valley fills.	
Idea	19. Mining companies could be encouraged to establish more consistent and effective outreach with citizens and local communities in watersheds affected by their operations. If done on a watershed basis, all companies with operations in a watershed could cooperate to foster better understanding of current and proposed mining operations and their effects, for example, by hosting annual “state of the watershed meetings” involving local officials, citizens and university experts.	
Idea	20. To improve watershed protection, CWA authorities are developing “total maximum daily load” (TMDL) requirements for pollutants. These currently apply to polluted streams rather than to mountain headwater areas, but similar water quality assessments could be established on a preventive basis, for use in assessing and managing mining and non-mining discharges in the same watershed.	
Idea	21. A system to submit electronic application data could be developed that would satisfy all State and Federal baseline data and analysis requirements and allow for public access.	
Idea	22. Cross training on watershed planning and resource management could be provided for staff of federal and state agencies and details could be initiated to exchange personnel between agencies.	

Idea	23. Options for improving efficiency could include changing the sequence of permitting to allow consideration of 402 effluent limitations in PHCs; industry preparation of the first draft of CHIA and 404(b)(1) analysis documents as part of the SMCRA application submission; and an expedited SMCRA permitting process for non-fill mining activities.	
Idea	24. Guidance could be developed to assist the applicants in collection of biological stream data. A program could be established to assure the integrity of any self monitoring of mining compliance with environmental safeguards. Quality assurance and control plans could be developed for acceptance of third-party data and the data could be provided to stakeholders.	
Idea	25. The frequency of CWA permit compliance inspections could be increased in order to give the public confidence in the self-monitoring data.	
Idea	26. Establish a system for evaluating frequency and impact of sediment overflow (e.g. from sediment retention ponds) to determine if additional controls are necessary.	
New Idea		
New Idea		
New Idea		

CATEGORY II ISSUES

Issue 2 - Impacts on Communities

Subissue A	Effects of blasting and other mining activities on homes, water wells, and quality of life.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. OSM is collecting information nationally to catalog blasting citizens complaints. This data will illustrate the diverse nature of the complaints (e.g. noise, dust, structure damage, water supply diminution, etc ...), spatial relationship between the adverse effect and blast, the compliance methods used by the company (seismic monitoring, scaled distance etc ...) , and mitigation measures used, the magnitude and pattern of the blast, and follow-up actions by the regulatory authority. The EIS will consider relevant information from this study to recommend actions.	
Idea	2. WVDEP is preparing regulations for implementing the new Office of Blasting as required by WV Senate Bill 681. This will provide an administrative process for handling nuisance complaints related to blasting.	
Idea	3. Establish an informal mediation, alternative dispute resolution process, or frequent facilitated discussion sessions to promote dialogue/mutual trust, and resolve disputes between citizens and mining companies.	
Idea	4. Increase outreach by regulators and potentially-affected citizens adjacent to proposed or approved mining operations for the purpose of explaining citizen rights for application review, complaint filing and resolution, and to generally explain mining process/consequences or answer other questions.	
New Idea		
New Idea		
New Idea		
New Idea		

Subissue B	Effects of fugitive dust--both as a nuisance and a health risk.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Currently, there are limited statutory or regulatory controls for fugitive dust and fumes from blasting. The EIS will make recommendations based upon the findings of the West Virginia University study related to this issue.	
Idea	2. Promote better methods (e.g., BMPs) for controlling fugitive dust and blasting fumes.	
Idea	3. Evaluate the need for additional research of the health impact of fugitive dust and blasting fumes.	
New Idea		
New Idea		
New Idea		
Subissue C	Effects from mountaintop mining on flooding of downstream communities.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. OSM has established an internal team to develop revised guidance for the development of PHC and CHIA analysis. Finalize this effort as soon as possible.	
Idea	2. An EIS technical study is evaluating peak runoff downstream of mountaintop mining and valley fill sites to determine whether stream channels could overflow and causing flooding. A recent flooding analysis of Island Creek was conducted, evaluating the "worst-case" cumulative impacts of multiple mining sites. Consider recommendations for program changes, if necessary, on the basis of these studies.	
New Idea		
New Idea		
Subissue D	Valley fill stability.	***Priority Ranking (1-high, 2, 3-low)***

Idea	1. The EIS includes a technical study documenting past fill failures and evaluating the effectiveness of existing program requirements to ensure the stability of excess spoil fills. Consider recommendations for program changes, if necessary, on the basis of these studies.	
New Idea		
New Idea		
Subissue E	Ability for reclaimed mined land to provide an economic and/or social benefit to coal field communities.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Develop ways to improve communication and coordination among government regulators, officials charged with economic development, local government officials, and coal companies, to integrate their plans and develop local economies.	
Idea	2. OSM issued draft post-mining land use policy guidance for steep slope variances from the approximate original contour (AOC) requirement and mountaintop removal. The final policy could promote that reclamation plans for AOC variances enhance the long-term economic viability of coal field communities (e.g. business ventures, tourism, recreational and other public facilities).	
Idea	3. WVDEP is developing rules for "homesteading" reclaimed mine land tracts to low-income eligible people as a residential post-mining land use. Assess whether comparable Federal standards should be developed or that other states consider similar approaches.	
Idea	4. Following the OSM policy on post mining land use, States should consider developing guidance on site criteria necessary for each category of post-mining land use (infrastructure specifications, site preparation performance standards, crop or forestry yield targets, normal/typical animal husbandry practices, industrial classification expectations etc.).	
New Idea		
New Idea		

Subissue F.	Effects of mining on scenery and culturally significant landscapes.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. WVDEP and OSM are piloting the development of policy guidance for use in mining application development and permit review that would determine the amount of spoil that must be placed in the mined area to achieve the SMCRA requirement of approximate original contour (AOC). Application of AOC requirements should minimize the impacts to view sheds especially if the reclaimed land is reforested.	
Idea	2. Establish procedures for early communication among coal companies, landowners, and the local citizens to discuss final land form development, land use potential and mining-related impacts/concerns.	
Idea	3. The EIS includes a cooperative effort with experts to assess the feasibility of reclamation mimicking natural land forms of the area and incorporating water resources (e.g., ponds or lakes). Encourage application of these concepts to SMCRA Title V and IV reclamation to promote more natural scenery.	
Idea	4. Create "land trusts," mitigation "banking" of pristine areas, or other creative mitigation techniques (such as AML reclamation) to offset active mining approvals.	
New Idea		
New Idea		
New Ideas		

<u>Issue 3</u> - Terrestrial impacts

<u>Subissue A</u>	Effects of mountaintop mining on plants and wildlife, including unique/endangered species.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Use public/private partnerships (like the Appalachian Wildlife or Forestry Council) with local/regional stakeholder input/participation to identify and protect wildlife assets, create and delineate wildlife refuges, publicize wildlife assets, promote conservation and wildlife area protection initiatives.	

Idea	2. Support research to identify the success and failings of previous wildlife enhancement reclamation plans (at active and abandoned mines), to come up with better ways to reclaim mine sites to reintroduce wildlife and native plant species, and to improve wildlife revegetation schemes based on species trend data information.	
Idea	3. Support OSM evaluation of the contemporaneous reclamation rule to assure reclamation proceeds as quickly as possible to restore impacted habitats.	
Idea	4. Develop and use a process to delineate and characterize terrestrial habitat, areas that support threatened and endangered species, and other valuable resources.	
Idea	5. Improve the State fish and wildlife plans for enhancing / preserving ecological stability, and use these plans in conjunction as a guide for post mining land use decisions.	
Idea	6. Consider establishing mitigation credit for mining companies who set aside special areas for: 1) breeding habitat, and other general protection of threatened and/or endangered species (e.g. a mussel preserve) where none previously existed; or 2) establishing a wilderness area.	
Idea	7. Form a government/stakeholder team to develop guidance to promote consistent, clear definitions of terms (e.g., native species and land cover, revegetation terminology, etc.) and biological impact thresholds for use in state/Federal programs.	
New Idea		
New Idea		
Subissue B	Effects of deforestation and reduction/fragmentation of forested areas by mountaintop mining.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. WVDEP is developing specific requirements for restoring mountaintop mine sites to commercial forestry.	
Idea	2. During the permitting process, consistently address fish and wildlife enhancement considerations when commercial forestry is proposed as a post mining land use.	
Idea	3. OSM through policy is clarifying the criteria for approving low-intensity agricultural activities (e.g. hayland) when an AOC variance is sought by the mining company.	

Idea	4. Assist States to incorporate into their respective SMCRA based regulatory programs the land category "commercial forestry" as an viable post-mining land use for mountaintop removal mines.	
Idea	5. Evaluate and recommend a process that encourages the re-establishment of riparian zone reforestation in all previous riparian-forested watersheds, regardless of the type of post-mining land use approved (similar to no net-loss wetland mitigation).	
Idea	6. OSM's reforestation initiative promotes the technical transfer of "best practices" regarding the growing of trees and woody shrubs on reclaimed mined sites. Support the OSM initiative by recommending reclamation practices that enhance reforestation with species of high-value wood product potential (such as placement of a sufficient thickness of loose-graded spoil, oxidized layer of overburden, and organic material in an un-compacted bed for seedling/root stock establishment).	
Idea	7. Evaluate the feasibility of establishing a system for on-site management of organic wastes (e.g., composting "root wads" and other biomass) to generate on-site dissolved organic carbon to offset mining impacts on headwater streams.	
New Idea	8. Mandate use of BMPs for recycling of non-harvestable forestry products or biomass encountered during the mining process (e.g., use as a replacement for leaf litter in commercial or forestry post-mining land use instead of burning).	
New Idea		
New Idea		
Subissue C	Cumulative effects on the environment from mining and other land disturbances	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. Encourage watershed assessment of the terrestrial impacts of all significant land use disturbances (i.e., not limited to mining). The assessment protocol might include consideration of regional areas, so as to properly assess cumulative impacts (e.g., evaluate population trends over areas larger than watersheds).	
Idea	2. Document and quantify the positive impacts of remining on environmental restoration (improvement of water quality, habitat, ecosystem, safety hazards, etc.).	
New Idea	3. The EIS landscape ecology study will include the development of thresholds that could be considered by States to assess cumulative terrestrial effects.	

New Idea		
New Idea		
Subissue D	Effects of mountaintop mining on biodiversity and sustainability.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1. FWS, in cooperation with State fish and wildlife agencies, could develop guidance, to promote biodiversity, biological sustainability, and re-introduction of native plants and animals.	
Idea	2. Conduct research, possibly borrowing from other fields of environmental restoration to develop technologies that would speed natural succession changes following mining; and methods encouraging long-term management fostering wildlife.	
Idea	3. Explore options to provide flexibility in SMCRA valley fill configuration requirements to build land forms that will enhance terrestrial habitat.	
New Idea		
New Idea		
Subissue E	Concerns that current mountaintop mining reclamation practices introduce and increase exotic and invasive plant species.	***Priority Ranking (1-high, 2, 3-low)***
Idea	1 State/Federal fish and wildlife agencies could develop policies, procedures, or best management practices to 1) list "species of concern" that should be avoided in reclamation; 2) foster the re-introduction of native plants and wildlife; and, 3) support biodiversity goals.	
Idea	2 Provide training and guidance to familiarize state agency staff and applicants' personnel with identification of exotic and invasive plant species and ways to discourage invasion onto reclaimed mine sites.	
New Idea		

CATEGORY III - OTHER ISSUES TO BE ANALYZED BY THE EIS	***Priority Ranking (1-high, 2, 3-low)***
Effects of further restrictions on mining on the competiveness of Appalachian coal, employment and coal field communities' businesses and tax revenues	
Effects on utility rates from further restrictions on large scale mining	
Effects of mining on global climate change	